Data Supplement S2: Summary tables of all included papers

Author, Year, Country	Study Design	Population/setting	Purpose	Main Findings
Shaw, 2013,(26) USA	Qualitative semi structured interviews.	ED patients triaged to non-urgent. (n=30)	To explore patient reasons for attending ED and knowledge of other healthcare options	7 patients had no knowledge of alternative primary care options. Remaining patients attended ED rather than Primary Care for the following reasons: instructed by a medical professional, access barriers to usual care, perceived racial issues, thought needed ED, transport barriers, cost.
Toloo, 2013,(27) Australia	Cross sectional survey of ED patients	Patients presenting at ED via ambulance or self transport. (n=911)	To describe patient views of perceived illness severity and reasons for using ambulance	Patients who use an ambulance believe their condition to be more serious. Reasons for calling an ambulance were: urgency or severity of their condition, requiring special care, getting higher priority at the ED, not having a car, financial concerns.
Amiel, 2014,(28) UK	Questionnaire	Patients presenting to open access urgent care centre attached to ED. (n=649)	To explore why patients with minor illness choose to attend an urgent care centre for their healthcare needs.	72% of patients were registered with a GP. Reasons for attending UCC were: access to care, expectation of receiving prescription medication, GP dissatisfaction. 68% did not contact their GP in the previous 24 h. Young adults registered with a GP used the UCC because of convenience and ease of access.
Benger, 2008,(29) UK	Qualitative, semi structured questionnaire	Patients admitted to inner city hospital after either ED or GP attendance.(n=200)	To investigate patient pathways to hospital admission for acute illness.	Most patients sought help/advice from a healthcare professional first. Most patients self-presented to ED and thought their condition was severe or urgent. There was incomplete awareness of out-of-hours GP service. Older patients admitted to hospital tend to have contacted primary care first. Younger patients tend to contact out of hours or other services. Attendance at ED was more common when help was sought by bystanders or persons known only slightly to the patient ($p=0.03$).

Lobachova, 2013,(30) US	Cross sectional survey of patients andPrimary Care Physicians (PCPs).	ED patient survey (n=1062). PCP survey (n=275)	To investigate reasons why patients choose ED for care and why PCPs think patients utilize ED.	Most patients came to ED because: they believed their problem was serious, they were advised by family, friends or health provider, they were referred. PCPs believed the most common reasons patients attended ED was that the patient chose to go on their own and patients felt that they were too sick to be seen in the PCP's office.
Norredam, 2007,(31) Denmark	Survey of walk-in patients to ED and care providers	Migrant and national citizen usage of ED at 4 different EDs. (n=3426).	To investigate if patients who are immigrants or Danish origin have different reasons for seeking ED care.	Immigrants were more likely to consider primary care before ED but were unable to access it. Immigrant populations were more likely to attend ED due to barriers in accessing primary care. National patients thought ED was more relevant to their needs.
Coleman, 2001,(32) UK	Questionnaire and review of notes.	Adults presenting to ED triaged to the two lowest priority streams. (n=267)	To estimate the potential of alternate urgent care services to reduce non-urgent demands on ED departments	Clinician review assessed that 55% of patients with non-urgent health problems who attend ED could be treated in alternate urgent care or by self. Nearly 25% of self-referred non-urgent patients had previously accessed other services for the same problem and most thought they needed a radiograph. There are differences in professional views and patient's perceptions of urgency and expectations of care.
Marco, 2010,(33) USA	Structured interviews.	Adult patients attending ED (n=292)	To identify factors influencing patients' decisions to seek ED care and to assess primary care access.	73% of patients had a PCP, but only 31% had contacted them about this health episode. Convenience, location, institutional preference and access to other physicians were the most common factors influencing patients decisions to attend ED. Participants chose ED over a PCP, because they had an emergency condition, communication challenges or did not have a PCP.

Shipman, 1997,(34) UK	Routine data collection; Telephone surveys	Patients presenting to OOH services. GP (OOH) and ED. (n=2564). Telephone surveys with ED attendees (n=82).	To examine out of hours, GP and ED use and to describe difference in service users.	Patient decision on whether to access GP or ED was based on perceived accessibility. GP was more likely to be contacted for respiratory, digestive, viral and non-specific problems. ED was more likely when injured or acute problem. Families with children are largest group of service users for both departments.
Beker, 2012,(35) South Africa	Qualitative questionnaire	Patients presenting to ED and triaged as "green" by the South African Triage Score. (n=277)	To determine patient-specific reasons for accessing ED for primary health care problems.	88.2% cases were self-referred. 30.2% had complaints lasting over a month. Only 4.7% of self-referred green cases were appropriate for ED. Common reasons for attending ED were: clinic medicine not helping, belief that hospital treatment is superior, no primary health service after-hours, clinic waiting times too long, patients being referred to the ED, perceived need for special tests in hospital.
Agarwal, 2012,(36) UK	Qualitative interviews	Patients and carers attending ED and Urgent Care Centre (n=23)	To explore why patients who could be managed by other services attend ED.	Important predictors of ED attendance include; anxiety about health and reassurance arising from familiarity with knowledge of the emergency service, issues with access to general practice, perceptions of the efficacy of the service, lack of alternative approaches to care.
Foster, 2001,(37) UK	Focus group	People aged between 65 and 81 years from community groups (n=30)	To explore older people's experiences and perceptions of different models of general practice out-of-hours services.	Participants had a stoical attitude to health and did not want to make excessive demands on services. Patients also experienced barriers e.g. using the telephone, travelling at night. Participants preferred contact with a familiar doctor and were distrustful of telephone advice, particularly from nurses. Older people appear reluctant to use OOH services and prefer OOH care delivered by a familiar GP.

Campbell, 2006,(38) Scotland UK	4 Focus groups and 51 in-depth interviews	Patients aged between 45 to 64 from urban and rural GPs (n=78).	To explore whether and how patients' consulting intentions take account of their perceptions of health service provision.	Anticipated waiting times for appointments affected consulting intentions, especially if severity of symptoms was uncertain. Patients developed strategies to overcome perceived issues and waiting times. Decisions to consult out-of-hours services were influenced by views and experiences of the service. Some preferred to attend nearby ED or call 999. Current changes to primary care unlikely to affect these decisions.
Worth, 2006,(39) Scotland UK	36 in-depth interviews; 8 focus groups; 50 telephone interviews.	Patients with advanced cancer who recently used out of hours services	To explore experiences and perceptions of out-of-hours (OOH) care for patients with advanced cancer and their carers.	Patients and carers had difficulty deciding whether to contact OOH services because of: anxiety about legitimacy of need, reluctance to bother doctor, perception of triage blocking access to care, OOH care impersonal. Effective planning, communication, and empathic staff created positive experiences. Current acute care does not take into account patients with complex needs.
Gomide, 2012,(40) Brazil	Qualitative interviews	Patients presenting to the ED who were 18 years or older. (n=23)	To identify why people use emergency care for non-urgent situations	Patients choose emergency care because: difficult to get immediate care at other services, limited opening hours for primary care, most patients work during primary care opening hours, EDs have more diagnostics. Primary care is unable to act as a door to the health system and increased strain on emergency services is occurring as a result.
Wilkin, 2012,(41) US	Qualitative, moderated interviews in community forum.	Adults (≥18) who previously used 911. (n=52)	What factors influence residents' decisions to use emergency versus primary care?	Medical literacy and class disparities acted as barriers to primary care. Patients were not always able to evaluate which health symptoms required emergency care. Issues around transportation, scheduling, costs, and patients' attitudes toward available primary health care options may prevent people from changing health care-seeking behaviours.

Müller, 2012,(42) Switzerland	Questionnaire.	Walk-in patients presenting at ED during hours in which GPs were open. (n=200)	To investigate why walk-in patients use ED during GP office hours.	82% walk-in patients were registered with a GP. 39% patients visited ED because they had greater confidence in the ED. Most patients preferred hospital to GP for emergencies - a condition requiring rapid attention or a life threatening situation (53%). There is demand for hospital based ambulatory emergency medicine.
Palmer, 2005,(43) UK	Semi-structured telephone interviews	Patients presenting to ED triaged to 4 or 5 on the Manchester Triage Score. (n=321)	To investigate why and how patients decide to attend ED and to assess patient satisfaction with the experience	86% of patients self-presented to ED. 90% were registered with a GP. 32% felt ED was the obvious choice, and a further 44% felt their GP inaccessible to their needs. Patient satisfaction was generally high but 27% reported a less satisfactory experience, 55% of these complaining of dismissive attitudes of doctors.
Scott, 2009,(44) US	Cross-sectional questionnaire	Patients presenting to an urgent care clinic. (n=1006)	To determine why adult patients choose to access an urgent care clinic	Patients chose urgent care clinic because: no appointment needed, convenience, same day test results, same-day medications, co-payment not mandatory. 68% patients had no regular physician and 57% lacked a regular source of care. Patients choose urgent care for convenience and more timely care.
Schumacher, 2013,(45) USA	Observational, cross-sectional study design	ED; Adults ≥18 years of age presenting to ED	To examine the relationship between health literacy, access to primary care and reasons for ED use among adults presenting for emergency care.	89% of patients believed their condition was an emergency on the day of the interview, 92% believed the ED was the right place to go for treatment and 93% were worried about their condition. Other reasons for ED attendance included a variety of accessibility, financial/insurance, health perceptions. Patients with lower health literacy were more likely to access care at ED rather than primary care.

Adamson, 2009,(46) UK	Mixed methods, cross-sectional questionnaire and semi- structured interviews.	Patients selected randomly from a single GP list. (survey n=911; interviews n=22)	To find out if people believe health services are used unnecessarily within primary care and ED, and the impact of these views on help-seeking behaviour.	Most patients believe GP and ED services are used inappropriately, however patients do not consider themselves to use services inappropriately. Anxiety strongly predictive of health seeking behaviour. Patients do not take lightly decisions to access care.
Hodgins, 2007,(47) Canada	Descriptive correlational study	ED; low urgency patients.(n=1612)	Can patients' response to less urgent health problems be predicted and how is this affected by location	Roles and functions of ED are shaped by its location (urban/rural). Differences were observed in the percentage of participants presenting at urban and rural emergency departments by type of health problem, characteristics of patients, actions taken, and factors precipitating the visit. The following items had the highest mean scores: 1) Reflecting participants' perceptions of need (severity of symptoms and concern problem will get worse), 2) characteristics of the context in which health care was sought (no other option and availability of family physician), 3)convenience of service 4) needed service only available at emergency department 5) advice from family or friends
Penson, 2011,(48) UK	Patient questionnaire and subsequent notes review.	ED; Patients 14 years and older. (n=285)	To estimate the potential of alternative care providers for minor health problems to reduce demands on ED	Notes review confirmed more than 2/3s of presenting conditions could be managed in non-ED settings. Patients most often attend ED because advised by someone else - usually a health care professional. Patient perceptions of need and urgency may mean potentially self-manageable conditions will continue to present at ED.
Jacob, 2008, USA	Survey.	ED; paediatric and adult patients. (n=311)	To define patient characteristics of ambulance users compared to non-ambulance users and reasons for ambulance use.	Those arriving at ED by ambulance were older, had higher triage scores, admission rates and self rated as sicker. Physicians agreed with transport method in 68% of patients arriving in ambulance and 92% non ambulance users.

Booker, 2013,(49) UK	Semi-structured interviews.	Patients and carers who called an ambulance for a primary care-appropriate problem. (n=16)	To explore and understand patient and carer decision making around calling an ambulance for primary care-appropriate health problems	Patient and carer anxiety play a large role in urgent-care decision making. Other themes surrounding perceptions of emergency care, past experience and risk management also contribute to decision making. Many ambulance calls are made due to incorrect knowledge about treatment other urgent care services provide.
Oetjen, 2010,(50) US	Qualitative survey questionnaire.	ED. Insured patients presenting to 4 ED departments (n=438)	To understand why insured patients use EDs rather than more appropriate medical alternatives available.	Many patients use ED reactively. 83% patients had a PCP. There was no correlation between ED use and whether patients had a PCP. 39% of patients did not contact a PCP before attending ED. Patients choose to attend ED because: PCP busy, PCP referral, OOH referral, patient perception of condition being serious, ED more convenient. friends recommendation, quality, location, staff.
Hoult, 1998,(51) UK	Qualitative interviews	Out of Hours. Patients calling OOH services within 2 days of a GP consultation. (n=20)	To elicit the proportion of patients who call out-of-hours within 2 days of a GP consultation, and to explore the reasons for the out-of-hours call	15% of patients who made OOH contact had had a GP appointment within the previous 2 days. 2/3s of calls were related to the initial problem, but with no evidence of patient dissatisfaction. Diversity of patients and problems in addition to prevalence of patients with multiple health issues appears to contribute to this pattern of service use.
Fieldston, 2012,(52) USA 3611	Focus groups with 25 guardians, 42 health professionals.	Guardians of children, primary care practitioners and paediatric emergency medicine physicians.	To elicit and to describe guardians' and health professionals' opinions on reasons for non-urgent paediatric ED visits.	Guardians focused on perceived illness severity of their child and the needs for diagnostic and other interventions, alongside accessibility and availability at times of day that worked for them. Professionals focused on systems issues, concerning availability of appointments, as well as parents lack of knowledge of medical conditions and knowledge of when ED use is appropriate.

Nelson, 2011,(53) Scotland UK	Qualitative telephone interviews using structured questionnaire.	ED; Patients with "standard, non-urgent" conditions. (n=27)	To understand patients' perceptions of the urgency of their condition and how this influences their decision to attend EDs	Patients attended ED for the following reasons: injury and pain, healthcare professionals and friends/family advising to attend ED, needed x-rays, referred by GP, advised by GP receptionist, couldn't get a GP appointment. Patient use of ED involved many social and cultural factors and patients chose to attend ED through informed choices.
McGuigan, 2010,(54) UK	Semi-structured telephone interviews	ED: Self referring patients aged over 16 triaged as non-urgent. (n=196)	To discover factors influencing patients reason for attending the ED for non-urgent treatment.	Most patients thought that their conditions required urgent attention. Haematomas and soft tissue injuries made up the largest proportion of the sample. Healthcare professionals were most common source of advice. Targeted social media campaigns and nurse advisors could help to point patients to more appropriate services.
Redstone, 2008,(55) USA	31 item, cross sectional survey	ED: Patients > 18, with a Primary Care Provider (PCP) who were subsequently triaged as non-urgent. (n=240)	To investigate why patients with minor problems and a PCP present to ED and to assess if this differs between weekday and non-weekday times.	There were high levels of self-perceived urgency and many felt they could not wait 1-2 days for treatment. More week-day than non-weekday patients felt their case was too difficult for PCP and 24% of patients felt they needed hospital admission. 60% of patients across both groups felt the ED was more convenient than their PCP. Patient education on self management and increasing access to PCPs may help with ED overcrowding.
Afilalo, 2004, Canada	Secondary data analysis from a cross sectional study in 5 EDs	ED: Patients aged 18 or over subsequently triaged as non- urgent or semi- urgent. (n=1783)	Compare urgent, semi-urgent and non-urgent patients and non-urgent patients' reasons for not seeking care with a PCP before presenting to the ED.	Non-urgent patients were younger, had fewer prior conditions were less likely to arrive by ambulance, and less likely to be admitted (4% vs 24%). Less than 25% of non-urgent and semi-urgent/urgent sought PCP care before attending ED. Reasons given by non-urgent patients for not seeking PCP care include: accessibility, perception of need, referral/follow up to the ED, familiarity with the ED, trust of the ED, no reason. Previous diversion strategies have been unsuccessful and multi-faceted approach should be taken in diverting non-urgent patients to correct care.

Carret, 2007, Brazil	Cross sectional study (interviews) of ED service use	ED patients aged 15 or over.(n=1647)	To identify the prevalence and risk factors for inappropriate use of a Brazilian ED.	Prevalence of inappropriate ED use was 24.2%. Inappropriate ED use was inversely associated with age and longer symptom duration. Among younger patients, more females used ED inappropriately. They used ED because no other options were available, e.g. no appointment at regular place of care or reduced clinic opening hours. Older educated patients had less self-reported chronic diseases and less social support but more likely to use ED inappropriately.
Gill, 1996, US	Patient survey, using structured interview techniques	ED: Patients considered non-urgent by the ED triage nurse. (n = 268)	To examine ED patients perceptions of urgency and to determine whether patients with no regular source of medical care are more likely to use ED for nonurgent problems.	82% of patients rated their problem as urgent. Patient rated urgency was not associated with lack of regular source of medical care. This lack has no significant impact on ED attendance. The most common factor for attending ED was expediency. Patients who rated their problem as urgent or non-urgent did not differ in their reasons for choosing the ED.
Lang, 1996, France	Cross sectional study	ED: Patients aged 15 and over. (n = 594)	To evaluate the proportion of patients who view the ED as their regular source of care and to describe the characteristics of this population.	Up to 14% said that the ED was a regular source of care. Young age, being born outside France, homelessness, lack of social support and lack of health insurance were independently associated with this health care utilisation behaviour. Lack of primary health care use was observed repeatedly and there is need to evaluate why.
Masso, 2007, Australia	Survey of staff and primary care patients in ED	5 EDs including small GP run rural units; rural regional; district metropolitan and tertiary referral units. (Patients, n=397 Nurses, n=93; Doctors,	To compare reasons identified by clinical staff for potential primary care attendances to the ED with those previously identified by patients.	Nurses and doctors identified more reasons for ED attendance than patients, but the top reasons were the same for all groups. Patients identified three reasons as the most important for attending ED: health problem required immediate attention/was too urgent to wait to see a GP or medical centre, can see the doctor and have all tests done in one place, health problem too serious/complex for other providers. Redesign, expectation and education needed to improve service provision.

		n=28)		
Moll Van Charante, 2008, The Netherlands	Postal questionnaires	ED: self referred patients. (n = 224)	To determine self-referrals' motives to visit ED and to compare their characteristics to patients contacting the GP cooperative	Main reasons to visit ED were perceived need for diagnostic facilities and belief that hospital specialist was best qualified to handle the problem. Dissatisfaction with GP cooperative was high. Self-referral to ED was positively associated with injury, age between 15 and 64, musculoskeletal, cardiovascular and respiratory problems, and distance to the GP centre.
Gindi, 2016, US	2013 and 2014 National Health Interview Survey	ED: Adults aged 18 - 64 (n=28053 in 2014, n=26825 in 2013)	To examine the proportion of adults aged 18–64 using the ED in the past 12 months and reasons for their most recent visit.	Reasons for visiting the ED were: seriousness of the medical problem, doctor's office not open, lack of access to other providers. 4% did not select any reason. Results were similar to 2013. After controlling for different variables the study found that type of insurance cover also played a role in decision making.